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| Office Action Summary | Application No. 10/595,193 | Applicant(s) KNOX, RON | |
| | Examiner JONATHAN TEIXEIRA MOFFAT | Art Unit 2863 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 May 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7,9-21 and 24-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7,9-21 and 24-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
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| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. <u>6/9/2010</u> . |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____. | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Response to Amendment

Applicant's amendments to the claims, filed 5/14/2010 in addition to a Request for Continued Examination, are accepted and appreciated by the examiner. Applicant has added new claims 26-29.

Additionally, the examiner thanks applicant's representatives for their time spent in a telephonic interview on 6/9/2010. A summary of such is included in this office action.

Claim Objections

Claims 1 and 12 are objected to because of the following informalities:

Claim 1 recites the intention of "determining an operational condition". However, no method step claimed realizes this goal. Claim 12 similarly has no step or component which explicitly achieves this result.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

1.

Claims 1-7, 9 and 26-27 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Specifically, applicant's invention appears to be directed to a method which is not tied to a specific machine or apparatus. Instead, it appears that this method may be performed on either a general-purpose computing device or even as a mental process. Further, it has been noted that mere field-of-use or insignificant extra-solution activity, though tied to a machine, is not

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sufficient to tie the method to a specific machine or apparatus. See MPEP 2106.IV.B and *In re Bilski*, 545 F.3d 943, 88 USPQ2d 1385 (Fed Cir. 2008) and *In re Alappat*, US Court of Appeals Federal Circuit No. 92-1381.

In claims 1 and 2, the broadest reasonable interpretation of "measuring" can include measuring by a human without the use of any particular machine or apparatus. In essence, "eyeballing" a flow to determine a "rate" such as fast, slow, or no flow. "Determining an operational condition" then can reasonably be a mental process for using the eyeballed information to come to a conclusion such as, "there is no flow because the machine is clogged" i.e. in a clogged "condition".

Each of claims 3-7, 9 and 26-27 depends on one of claims 1 and 2 and thus includes the same issues.

2.

Claims 21 and 25 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claims are drawn to a "computer usable medium". The broadest reasonable interpretation of a claim drawn to a computer readable medium covers forms of non-transitory tangible media and transitory propagating signals *per se* in view of the ordinary and customary meaning of computer readable media, particularly when the specification is silent (see MPEP 2111.01). Because the broadest reasonable interpretation covers a signal *per se*, a rejection under 35 USC 101 is appropriate as covering non-statutory subject matter. See 351 OG 212, Feb 23 2010.

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The Examiner suggests that Applicant amends the claims as follows: "non-transitory computer usable medium containing computer instructions stored therein for causing a computer processor to perform".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3.

Claims 1-6, 9-16, 18-21 and 24-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krajewski (US pat pub 20010004842) in view of Conkle (US pat 4569235).

With respect to claim 1, Krajewski discloses a method comprising:

1) Conducting an upstream measurement of a flow rate (Fig 1 item 6) through the at least one sample inlet (Fig 1 item 3 and paragraph 0025). *The calibration state of the device with respect to its pump is certainly an operational condition. Further, since these devices are known to require constant and correct flow for accuracy (paragraph 0002) this relates directly to accuracy of the particle detector.*

With respect to claim 1, Krajewski fails to disclose:

2) Sampling using an extension means such that the measuring is performed at a point remote from the sampling inlet, at or near ground level. *Although inlet 5 of Krajewski can be fairly assumed to meet these limitations inherently, it is not discussed in detail.*

Conkle teaches, with respect to claim 1:

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2) Sampling using an extension means such that the measuring is performed at a point remote from the sampling inlet, at or near ground level (Fig 2 items 30, and 32 and related discussion). *The sampling inlet components 30 are discussed to sealably connect to samplers 24 via tubes 32. The entire device sits on ground level and the tubes provide extension between the sampling and the air inlet.*

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify the apparatus of Krajewski by employing an extension tube as taught by Conkle. Both Krajewski and Conkle are directed to personal air sampling and thus are analogous arts. One of ordinary skill in the art, in reviewing Krajewski would have assumed that inlet 5 could reasonably be a tube comprising a sealed connection to an inlet. Even if this were not the case, one of ordinary skill in the art would have seen the benefit of the connector tube of Conkle which is able to place the sample inlet remote from the sensing component such that said sensing component need not be in direct contact with the sensed air. This allows flexibility of layout of the components and casing (such as the transportable box of Conkle) which would have been an obvious modification to one of ordinary skill in the art requiring no more than routine skill in the art.

With respect to claim 2, Krajewski discloses a method comprising:

1) Measuring the upstream flow rate through at least one sampling inlet of a particle detector system (Fig 1 item 6 and paragraph 0025).

2) Determining an operational condition of the pollution monitoring equipment in accordance with the measured flow rate (paragraph 0025 and Fig 2). *See comments with respect to claim 1 above.*

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With respect to claim 2, Krajewski fails to disclose:

3) Sampling using an extension means such that the measuring is performed at a point remote from the sampling inlet, at or near ground level. *Although inlet 5 of Krajewski can be fairly assumed to meet these limitations inherently, it is not discussed in detail.*

Conkle teaches, with respect to claim 2:

3) Sampling using an extension means such that the measuring is performed at a point remote from the sampling inlet, at or near ground level (Fig 2 items 30, and 32 and related discussion). *The sampling inlet components 30 are discussed to sealably connect to samplers 24 via tubes 32. The entire device sits on ground level and the tubes provide extension between the sampling and the air inlet.*

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify the apparatus of Krajewski by employing an extension tube as taught by Conkle. Both Krajewski and Conkle are directed to personal air sampling and thus are analogous arts. One of ordinary skill in the art, in reviewing Krajewski would have assumed that inlet 5 could reasonably be a tube comprising a sealed connection to an inlet. Even if this were not the case, one of ordinary skill in the art would have seen the benefit of the connector tube of Conkle which is able to place the sample inlet remote from the sensing component such that said sensing component need not be in direct contact with the sensed air. This allows flexibility of layout of the components and casing (such as the transportable box of Conkle) which would have been an obvious modification to one of ordinary skill in the art requiring no more than routine skill in the art

With respect to claims 3 and 13, Krajewski discloses repeating the step of measuring the upstream flow rate after a predetermined time interval (paragraphs 0011 and 0024-0025) and determining the operational condition by comparing respective flow rate measurements (paragraphs 0011 and 0024-0025).

With respect to claim 4, Krajewski discloses that the predetermined time interval, comprises one or more of: the occurrence of a maintenance action (paragraph 0024); regular calendar periods (paragraph 0024). *In the first case, a first flow test is considered a maintenance action, therefore the second test is performed after said first maintenance action. In the second case the tests are performed subsequently according to the microprocessor's clock which is preprogrammed or scheduled.*

With respect to claim 5, Krajewski discloses that measuring the upstream flow rate, in the first instance, is performed upon one of: repair of the pollution monitoring equipment (paragraphs 0011 and 0024-0025). *The recalibration of the device can be considered to be a repair.*

With respect to claims 6, 11 and 19, Krajewski discloses that the pollution monitoring equipment comprises one or more of: at least one sampling inlet (Fig 1 item 3) of an aspirated particle detector system (paragraph 0017); a particle detector (Fig 1 item 2); a sampling pipe network of an aspirated particle detector system (Fig 1 items 3 and 7); a portion of a sampling pipe network of an aspirated particle detector system (Fig 1 items 3 and 7); an aspirated particle detector system (Fig 1 item 2 and paragraph 0017).

With respect to claim 8, Krajewski discloses that the step of measuring the flow rate is performed at a point remote from the sampling inlet, at or near ground level (Fig 1 item 6).

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Applicant has provided no specific guidance for the interpretation of “remote” or “near” so examiner is forced to rely on the common definitions.

With respect to claim 9, Krajewski discloses that the operational condition comprises one or more of: a) particle detection system sensitivity (paragraph 0002); b) particle detector sensitivity (paragraph 0002). *As stated, and as known in the art, constant flow is required for accuracy.*

With respect to claim 10, Krajewski discloses an apparatus comprising:

1) A flow sensor arrangement (Fig 1 item 6) adapted to form a sealed fluid communication path (Fig 1 item 4) between a flow sensor and a sampling inlet of the detector system (Fig 1 item 3), wherein the flow sensor determines the flow rate through the sampling inlet so as to allow a determination of an operating condition of the pollution monitoring equipment (paragraphs 0011 and 0025). *See comments with respect to claim 1 above.*

With respect to claim 10, Krajewski fails to disclose:

2) Wherein the sealed fluid communication path further includes an extension means between the flow sensor and the sampling inlet. *Although inlet 5 of Krajewski can be fairly assumed to meet these limitations inherently, it is not discussed in detail.*

Conkle teaches, with respect to claim 10:

2) Sampling using an extension means such that the measuring is performed at a point remote from the sampling inlet, at or near ground level (Fig 2 items 30, and 32 and related discussion). *The sampling inlet components 30 are discussed to sealably connect to samplers 24 via tubes 32. The entire device sits on ground level and the tubes provide extension between the sampling and the air inlet.*

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It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify the apparatus of Krajewski by employing an extension tube as taught by Conkle. Both Krajewski and Conkle are directed to personal air sampling and thus are analogous arts. One of ordinary skill in the art, in reviewing Krajewski would have assumed that inlet 5 could reasonably be a tube comprising a sealed connection to an inlet. Even if this were not the case, one of ordinary skill in the art would have seen the benefit of the connector tube of Conkle which is able to place the sample inlet remote from the sensing component such that said sensing component need not be in direct contact with the sensed air. This allows flexibility of layout of the components and casing (such as the transportable box of Conkle) which would have been an obvious modification to one of ordinary skill in the art requiring no more than routine skill in the art.

With respect to claim 12, Krajewski discloses an apparatus comprising:

1) A connector adapted to sealingly engage a sampling inlet of a particle detector system (Fig 1 item 5). *This tube would not be of use if it did not seal.*

2) A sensing device comprising a flow sensor for conducting an upstream measurement of flow through the sampling inlet (Fig 1 item 6), wherein the sensing device is operatively connected to a flow data storage (Fig 1 item 1). *See comments with respect to claim 1 above.*

With respect to claim 12, Krajewski fails to disclose:

3) An extension means providing sealed fluid communication between the connector and sensing device such that a flow path is formed between the sensing device and the sampling inlet via the connector. *Although inlet 5 of Krajewski can be fairly assumed to meet these limitations inherently, it is not discussed in detail.*

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Conkle teaches, with respect to claim 12:

3) An extension means providing sealed fluid communication between the connector and sensing device such that a flow path is formed between the sensing device and the sampling inlet via the connector. (Fig 2 items 30, and 32 and related discussion). *The sampling inlet components 30 are discussed to sealably connect to samplers 24 via tubes 32. The entire device sits on ground level and the tubes provide extension between the sampling and the air inlet.*

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify the apparatus of Krajewski by employing an extension tube as taught by Conkle. Both Krajewski and Conkle are directed to personal air sampling and thus are analogous arts. One of ordinary skill in the art, in reviewing Krajewski would have assumed that inlet 5 could reasonably be a tube comprising a sealed connection to an inlet. Even if this were not the case, one of ordinary skill in the art would have seen the benefit of the connector tube of Conkle which is able to place the sample inlet remote from the sensing component such that said sensing component need not be in direct contact with the sensed air. This allows flexibility of layout of the components and casing (such as the transportable box of Conkle) which would have been an obvious modification to one of ordinary skill in the art requiring no more than routine skill in the art.

With respect to claim 14, Krajewski discloses an articulated connection intermediate the connector and extension means for providing relative movement between the connector and extension means (Fig 1 items 4 and 3). *This is a simple pipe connection which can be twisted or slid apart or toward one another.*

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With respect to claim 15, Krajewski discloses an articulated connection intermediate the sensing device and extension means for providing relative movement between the sensing device and extension means (Fig 1 items 4 and 3). *This is a simple pipe connection which can be twisted or slid apart or toward one another.*

With respect to claim 16, Krajewski discloses that the articulated connection comprises a flexible collar (Fig 1 items 3 and 4). *This duct or tube is certainly a "collar" since it slips around the other tube. Further it is "flexible" since it is capable of being bent or changed.*

With respect to claim 18, Krajewski discloses a method comprising:

- 1) Connecting a flow sensing apparatus to a sampling inlet of an air sampling system (Fig 1).
- 2) Measuring the air flow rate into the sampling inlet (paragraph 0025).
- 3) Comparing the measured air flow with a previously measured air flow at the time of commissioning the detector system (Fig 2 and paragraphs 0011 and 0024-0025).

With respect to claims 20-21 and 24-25, Krajewski discloses an apparatus (Fig 1) adapted to perform one of: a) determine an operational condition of a particle detection system (paragraphs 0011 and 0024-0025); b) test the operation of pollution monitoring equipment (paragraphs 0011 and 0024-0025); or c) field test a particle detector system (paragraphs 0011 and 0024-0025). *See above comments with respect to claim 1.*

With respect to claim 18, Krajewski fails to disclose:

- 1) A sampling inlet including an extension means *Although inlet 5 of Krajewski can be fairly assumed to meet these limitations inherently, it is not discussed in detail.*

Conkle teaches, with respect to claim 18:

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1) A sampling inlet including an extension means(Fig 2 items 30, and 32 and related discussion). *The sampling inlet components 30 are discussed to sealably connect to samplers 24 via tubes 32. The entire device sits on ground level and the tubes provide extension between the sampling and the air inlet.*

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify the apparatus of Krajewski by employing an extension tube as taught by Conkle. Both Krajewski and Conkle are directed to personal air sampling and thus are analogous arts. One of ordinary skill in the art, in reviewing Krajewski would have assumed that inlet 5 could reasonably be a tube comprising a sealed connection to an inlet. Even if this were not the case, one of ordinary skill in the art would have seen the benefit of the connector tube of Conkle which is able to place the sample inlet remote from the sensing component such that said sensing component need not be in direct contact with the sensed air. This allows flexibility of layout of the components and casing (such as the transportable box of Conkle) which would have been an obvious modification to one of ordinary skill in the art requiring no more than routine skill in the art.

With respect to claims 26-29, Krajewski discloses a pipe in which said at least one sample inlet is provided and a particle detector downstream of the at least one sample inlet (Fig 1 items 3 and 4). *This duct or tube can be fairly considered to be a "pipe" as it is a round extension means which transports fluid (air). Further, it is in-line with and thus connected to the sample inlet.*

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4.

Claims 7 and 17 rejected under 35 U.S.C. 103(a) as being unpatentable over Krajewski and Conkle as applied to claims 1 and 10 above, and further in view of Stark (US pat 6439062).

With respect to claims 7 and 17, Krajewski and Conkle fail to disclose that measuring the flow rate is performed using an ultrasonic flow sensor.

Stark teaches, with respect to claims 7 and 17, that measuring of flow rate is performed using an ultrasonic flow sensor (column 1 lines 16-25 and column 8 lines 42-48).

It would have been obvious to one of ordinary skill in the art to modify the apparatus and method of Krajewski and Conkle by utilizing an ultrasonic flow monitoring device as taught by Stark. Krajewski does not specify what sort of flow meter be used. One of ordinary skill in the art would logically have looked to the prior art for information concerning known devices which can perform this function, such as that of Stark. Ultrasonic flow meters are well known in the art of flow metering and thus would have been an obvious choice.

Response to Arguments

Applicant's arguments filed 5/14/2010 have been fully considered but they are not persuasive.

On page 11 of the response, applicant argues that the tubing of Conkle goes into the sampler but is not upstream of the flow rate measurement. The examiner points out that this is moot as Conkle is not relied upon to teach this feature or to modify Krajewski in this way. Conkle is relied upon only to disclose as obvious the use of an elongated extension tube in the endeavor of Krajewski.

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Applicant then argues that the tubing of Conkle is not an “extension means” but is rather a “connection” only. The examiner respectfully disagrees. The tubes of Conkle have length and thus are “extended” and thus “extend” from one connected component to another. Thus these tubes are an “extension means” given the broadest reasonable interpretation of the language to one of ordinary skill in the art.

On page 12 of the response, applicant argues that neither Conkle nor Krajewski disclose “testing a particle detection system” pointing out that Krajewski is directed to “calibration” and Conkle is directed to “flow rate control”. The examiner disagrees in the sense that “testing” is so limited that “calibration” and “flow rate control” are excluded as possible interpretations. In evidence of this, Krajewski even uses the word “test” in the Abstract to describe a portion of the calibration process. Thus this calibration includes a “test” of the flow rate. With respect to Conkle, the examiner maintains that a flow rate control requires measurement of the flow rate which is in itself a “test” of the flow rate.

For these reasons, the examiner maintains that the prior art, as cited and described, fully obviate applicant’s invention as a whole.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JONATHAN TEIXEIRA MOFFAT whose telephone number is (571)272-2255. The examiner can normally be reached on Mon-Fri, from 7:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jonathan C. Teixeira Moffat/
Jonathan C. Teixeira Moffat
6/9/2010